TSEYTLIN, A. A.

USSR/Medicine - Roentgenology FD 221

Card 1/1

Author : Tseytlin, A. A., Professor; Fridberg, S. N.

Title : Roentgenotherapy of acute post operational anastomosis

Periodical : Vest. Rent. i Rad. 2, 82-85, Mar/Apr 1954

Abstract : Small doses of X-ray radiation are effective in acute post operational anastomosis.

Institution : X-ray Department (Chief - Honored Worker of Science Professor A. A. Tseytlin) Clinical Hospital No 33 imeni Ostroumova (Head Physician - P. V. Abashkina).

Roentgenology Dept, Clinical Hospital #33, im Ostroumov

TSEYTLIN, A.A., zasluzhennyy deyatel' nauki, professor.

Paleontology aids medicine. Nauka i zhizn' 23 no.7:28-29 Jl '56.
(PALEONTOLOGY) (MLRA 9:9)

DANILIN, Boris Stepanovich; TSEYTLIN, A.B., nauchnyy red.; KOBRINSKAYA,
M.V., red.; GOROKHOV, Yu.N., tekhn.red.

[Vacuum and its applications] Vakuum i ego primenenie. Moskva,
Vses.uchebno-pedagog.izd-vo Trudrezervizdat, 1958. 87 p. (MIRA 12:4)
(Vacuum apparatus)

TSEYTLIN, A. B.'
Institute of Vacuum Metallurgy ½ Moscow

"New Series of the High Productive Oil Booster Pumps."

paper presented at Second Symposium on the Application of Vacuum Metallurgy.

Moscow, 1-6 July 1958

TSEYTLIN, A.B.

PHASE I BOOK EXPLOITATION SOV/4548

Akademiya nauk SSSR. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali

Primeneniye vakuuma v metallurgii (Use of Vacuum in Metallurgy) Moscow, Izd-vo AN SSSR, 1960. 334 p. Errata slip inserted. 4,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni A.A. Baykova. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali.

Resp. Ed.: A.M. Samarin, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: G.M. Makovskiy; Tech. Ed.: S.G. Markovich.

PURPOSE: This collection of articles is intended for technical personnel interested in recent studies and developments of vacuum steelmaking practice and equipment.

COVERAGE: The book contains information on steel melting in vacuum induction furnaces, and vacuum arc furnaces, reduction processes in vacuum, and degassing of steel and alloys. The functioning of apparatus and equipment, especially vacuum furnaces and vacuum booster pumps is also analysed. Personalities are mentioned in connection with some of the articles and will appear in the Table of Contents. Three articles have been translated from English. Some of the

Vera, I. (Hungarian People's Republic). The Mechanism of Degassing of Molten Steel in Vacuum 257

Kamenetskaya, D.S., I.B. Piletskaya, and V.I. Shiryayeva. On the Problem of Vacuum Melting of Metals 264

Elliot, D. Solubility of Nitrogen in Iron-Chromium-Nickel Melts 273

PART V. APPARATUS AND EQUIPMENT

Fogel', A.A. Levitation Melting of Metals in Vacuum or in the Inert-Gas Atmosphere 279

Marmer, E.N., and E.Ye. Khasanov. Investigation of Individual Subassemblies of Vacuum Electric Furnaces 290

Mikulinskiy, A.S., A.P. Selyanskiy and A.G. Poluboyartsev. Highly Productive Continuous Vacuum Furnaces 298

Tseytlin, A.B. A New Series of Highly Productive Vapor-Stream Pumps [G.G. Kamenshchikov and V.A. Kosarev participated in the work] 310

Kuznetsov, V.I. Highly Productive Mechanical Booster [Roots] Pumps 316

Baykov, V.S. Determination of Gas Content in Steel and Ferroalloys 320

Gurevich, Ya.B. Hot Rolling of Metals in Vacuum 326

AVAILABLE: Library of Congress

14

TSEYTLIN, A.B.; FALALEYEV, L.V.

The RVA-1-2 vacuum mercury-vapor unit. Prib.i tekh.eksp. 6 no.5:120-126 S-O '61. (MIRA 14:10)
(Vacuum apparatus)

L 8613-66 EWT(m)/EWP(j)/T/EWP(t)/EWP(b) JD/WW/WB/DJ/RM
ACC NR: AP5027030 SOURCE CODE: UR/0120/65/000/005/0177/0182

44,55

71

B

AUTHOR: Tseytlin, A. B.

ORG: None

TITLE: A metal mercury vapor unit with a maximal vacuum of 4 x 10^{-12} mm Hg

SOURCE: Pribory i tekhnika eksperimenta, no. 5, 1965, 177-182

11,44,55

TOPIC TAGS: ultrahigh vacuum, vacuum ejector pump, high vacuum pump, corrosion, corrosion inhibitor, protective coating

ABSTRACT: The present article describes an oil-less, ultrahigh mercury vacuum pumping unit consisting of an N-5SP 500-liter high-vacuum pump connected to a DRN-50 50-liter auxiliary mercury pump. Results of extensive tests of the unit showed that the maximal vacuum depends by the leakage of hydrogen due to the corrosion of the thin-walled bellows at the outlet of the nitrogen tubing leading from the nitrogen traps. A prevention of this corrosion by the PK-18 anticorrosion silicon-organic enamel coating improved the maximal vacuum of the unit from 10^{-10} to 10^{-12} mm Hg. The unit's capacity is 85—90 liter/sec in the 10^{-3} to 10^{-8} mm Hg region and 1400 liter/sec in the (2—5) x 10^{-11} mm Hg domain. The sharp increase of the action in the ultrahigh vacuum region is due to gas sorbtion on the cold nitrogen trap surface. Author notes the useful participation of V. I. Gagarin in the experimental part of the investigation. Orig. art. has: 6 figures.

44,55

SUB CODE: IE / SUBM DATE: 25Jul64 / ORIG REF: 001 / OTH REF: 004

UDC: 621.527

Card 1/1 jrn

2

TSEYTLIN, A.B.

8 Copy P. 1+2

PHASE I BOOK EXPLOITATION SOV/6270

Samarin, A. M., ed., Corresponding Member, Academy of Sciences USSR.

Vakuumnaya metallurgiya (Vacuum Metallurgy). Moscow, Metallurgizdat, 1962. 515 p. Errata slip inserted. 3200 copies printed.

Ed. of Publishing House: V. I. Ptitsyna; Tech. Ed.: L. V. Dobuzhinskaya.

PURPOSE: This book is intended for engineering personnel of metallurgical and machine-building plants, scientific research workers and teachers, and aspirants and students at schools of higher technical education.

COVERAGE: Thermoydnamic fundamentals of vacuum application in various metallurgical processes and problems of melting in vacuum induction and arc furnaces are discussed. Procedures of casting large ingots and vacuum degassing of steel in ladles are described, along with designs of metallurgical vacuum equipment. Problems connected with the use of mechanical and steam-ejector vacuum pumps, and with the

Card ~~1/7~~ 1/3

SOV/6270

Vacuum Metallurgy

designing, calculation, and operation of vacuum systems, are reviewed in detail, along with vacuum-measuring techniques. No personalities are mentioned. Each article is accompanied by references, mostly Soviet.

TABLE OF CONTENTS:

Foreword 5

Polyakov, A. Yu. Thermodynamic Fundamentals of Vacuum Application in the Processes of Making Steels and Alloys 7

1. General laws 7
2. Reactions in reduction of metal oxides with carbon 29
3. Deoxidation of steel 33
4. Degassing of metal 46
5. Distillation of alloy components in vacuum-melting processes 53
6. Interaction of molten metal and refractory lining 63

Card ~~2/7~~ 2/3

SOV/6270

Vacuum Metallurgy

2. Low-vacuum pumps 340
3. Medium-vacuum pumps 344

Tseytlin, A. B. Steam-Ejector Vacuum Pumps 350
Introduction 350
1. Outline of basic characteristics of steam-jet vacuum pumps 353
2. Some information on the flow from nozzles 354
3. Vacuum steam-ejector-pumps ($10-10^{-2}$mm Hg) 358
4. Oil steam booster pumps ($10^{-1}-10^{-4}$mm Hg) 364
5. High-vacuum steam-ejector pumps 372
6. Steam-ejector vacuum units 387

Tseytlin, A. B. Fundamentals of Calculating Vacuum-System Parameters 390
Introduction 390
1. Flow of gas in vacuum systems 392
2. Procedure for calculating parameters of a system with a given output 412

Card ~~6/7~~ 3/3

TSEYTLIN, A.B.

Metal mercury-vapor unit providing a maximum vacuum of 4.10^{-12} torr. Prib. i tekh.eksp. 10 no.5:177-182 S-O '65.
(MIRA 19:1)

1. Submitted July 25, 1964.

S/133/63/000/004/010/011
A054/A126

AUTHOR: Tseytlin, A. B.

TITLE: The prospects of the application of steam jet ejectors in metallurgy

PERIODICAL: Stal', no. 4, 1963, 374 - 377

TEXT: Principles, constructional and operational features of ejector-type pumps used in the vacuum treatment of steel in the ladle or during pouring are described. One of the advantages of such pumps is that a vacuum as low as 0.5 - 1 mm Hg can be produced as against 8 - 3 mm Hg residual pressures with conventional pumps. The steam jet ejectors force out steam at a pressure of 6 - 10 atmospheres and at supersonic speeds. In some types the equipment is provided with condensers. Pressures of 10^{-1} - 10^{-2} mm Hg can be obtained in multi-stage pumps without a condenser in the first stage in which, however, the steam consumption increases considerably. The ejectors can operate in dusty atmosphere without need for filters; they have no rotating parts and may be mounted indoors as well as outdoors. A 5-stage steam jet ejector (type НЭВ -100x1/NEV-100x1) designed for the zavod "Dneprospetsstal'" ("Dneprospetsstal'" Plant) has a ca-

Card 1/2

The prospects of the application of...

S/133/63/000/004/010/011
A054/A126

pacity of 100 kg/h at 1 mm Hg, it is supplied with barometric condensers after the 2nd, 3rd and 4th stage; the technical data of this equipment are: rate of operation: 16,500 l/sec, weight: 9 tons, water consumption (at 28°C): 180 m^3/h, steam consumption (at 15 atm): 2,200 kg/h. In correlation with the amount of steel to be vacuum treated at 0.5 mm Hg the following data should be considered:

Steel charge (ton)	10	25	50	120
Capacity (kg/h)	50	100	200	400

To increase the rate of which the vacuum is produced, a booster ejector is sometimes used, decreasing the pressure from 760 to 100 mm Hg in 1 - 2 min. The application of steam jet ejectros to producing vacuum is economical, as it shortens the melting time and because it is possible to attain a much lower vacuum in the ladle or the electric furnace than with the conventional pumps, which improves the metal quality at low production costs and investments. There are 6 figures.

Card 2/2

TSEYTLIN, A.B.

Prospects for the use of vacuum steam-ejector pumps in metallurgy.
Stal' 23 no.4:374-377 Ap '63. (MIRA 16:4)
(Vacuum metallurgy) (Pumping machinery)

TSEYTLIN, A.B.

Small-size steam-ejector vacuum pump of a capacity of o.5 kg./hour.
Prib. i tekh. ėksp. 7 no.3:130-132 My-Je '62. (MIRA 16:7)
(Vacuum pumps)

TSEYTLIN, Aleksandr Borisovich; ZAYDENSHTEYN, D.Kh., red.

[Steam-jet vacuum pumps] Parostruinye vakuumnye nasosy. Moskva, Energiia, 1965. 398 p. (MIRA 18:12)

TSEYTLIN, A.G.

Urgent problems in the activity of the school physician. Pediatriia no.8:3-8 '62. (MIRA 15:10)

(SCHOOL PHYSICIANS)

TSEYTLIN, A. G.

Tseytlin, A. G. "Physical development of health condition and morbidity of children in 1943-44," Trudy VI Vsesoyuz. s'yezda det. vrachey, posvyashch. pamyati prof. Filatova, Moscow, 1946, p. 377-78

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Statey, No. 3, 1949)

TSEYTLIN, A.G., professor

Physical development of preschool children and children of school age. Vop.okh.mat. i det. 1 no.4:68-74 Jl-Ag '56. (MLRA 9:9)

1. Iz Gosudarstvennogo nauchno-issledovatel'skogo pediatricheskogo instituta Ministerstva zdravookhraneniya RSFSR (direktor - kandidat meditsinskikh nauk V.N.Karachevtseva) Moskva.
(CHILDREN--GROWTH)

TSEYTLIN, A.G., professor

On medical service at boarding schools. Vop.okh.mat.i det. 2 no.3: 70-75 My-Je '57. (MLRA 10:7)

1. Iz Gosudarstvennogo nauchno-issledovatel'skogo pediatricheskogo instituta (dir. - kandidat meditsinskikh nauk V.N.Karachevtseva)
(BOARDING SCHOOLS--SANITARY AFFAIRS)

TSEYTLIN, A.G., prof.

Studies on the physical development, the state of health and morbidity of children during 40 years. Pediatriia no.10:74-80 O '57. (MIRA 11:2)
(GROWTH)

GAGAYEVA, Mariya Alekseyevna; TSEYTLIN, A.G., doktor med. nauk prof., red.; PELEVINA, T.I., red.

[Protection of motherhood and childhood in Gorkiy and Gorkiy Province, 1860 - 1960] Okhrana materinstva i detstva v g.Gor'kom i oblasti (1860-1960). Gor'kii, Volgo-Viatskoe knizhnoe izd-vo, 1965. 157 p. (MIRA 18:12)

MAKSIMOVA, L.I.; TSEYTLIN, A.G., prof., nauchnyy rukovoditel'

Basic indices of the physical development in newborn infants in Dzerzhinsk. Pediatriia 4 no.7:54-56 Jl'63 (MIRA 16:12)

1. Glavnyy pediatr Gor'kovskogo oblastnogo otdela zdravookhraneniya (for Maksimova).

TSEYTLIN, Aleksandr Grigor'yevich; KHANOVA, T.M., red.; MATVEYEVA. M.M., tekhn. red.

[Physical development of children and adolescents] Fizicheskoe razvitie detei i podrostkov. Moskva, Medgiz, 1963. 203 p. (MIRA 17:3)

*

ALEKSEYEV, S.N.; ANTIPIN, V.A.; ARTAMONOV, V.S.; BALALAYEV, G.A., inzh.; VOLODIN, V.Ye.; GOL'DENBERG, N.L.; GORINA, B.S.; GOFEN, D.A.; GRISHIN, M.Ye.; DERESHKEVICH, Yu.V.; DORONENKOV,I.M.; KLINOV, I.Ya., doktor tekhn. nauk, prof.; LEYRIKH, V.E.; LUTONIN, N.V.; MOLOKANOV, A.V., dots.; NOGIN, A.Ya.; PAKHOMOV, N.M.; PROTOSAVITSKAYA, Ye.A.; ROMOV, I.V.; CHAPLITSKIY, L.A.; TSEYTLIN, A.G.;STRAV'YE,P.K.; MOSHCHANSKIY, N.A., doktor tekhn. nauk, prof., red.; PEREVALYUK, M.V., red.izd-va; TEMKINA, Ye.L., tekhn.red.

[Corrosion protection in the construction of industrial buildings] Zashchita ot korrozii v promyshlennom stroitel'stve. Moskva, Gosstroiizdat, 1963. 406 p. (MIRA 16:12)

(Corrosion and anticorrosives)
(Industrial buildings)

TSEYTLIN, A.G., prof.

Medical attendance for schools and school children. Vop. okhr. mat. i det. 6 no.6:9-13 Je '61. (MIRA 15:7)

1. Iz nauchno-issledovatel'skogo pediatricheskogo instituta (dir. - doktor med. nauk A.P. Chernikova).

(SCHOOL HYGIENE)

ARON, D.I.; STAVITSKAYA, A.B., kand. biol. nauk; GOL'DFEL'D, A.Ya., doktor med. nauk, red.; MERKOV, A.M., doktor med. nauk, red.; TSEYTLIN, A.G., doktor med.nauk, red.; URAZAYEV, N.M., red.; ZUYEVA, N.K., tekhn. red.

[Materials on the physical development of children and youths in some cities and rural settlements of the U.S.S.R.]Materialy po fizicheskomu razvitiiu detei i podrostkov nekotorykh gorodov i sel'skikh mestnostei Soiuza SSR. Pod red. A.IA. Gol'dfel'd, A.M.Morkova, A.G.TSeitlina. Moskva, Medgiz. No.1. 1962. 374 p. (MIRA 15:10)

1. Institut organizatsii zdravookhraneniya i istorii meditsiny im. N.A.Semashko (for Aron). 2. Institut pediatrii Akademii meditsinskikh nauk SSSR (for Stavitskaya).

(CHILDREN--GROWTH)

TSEYTLIN, A.G., red.; SAL'NIKOVA, G.P., red.; TILEVICH, M.G., red.;
NOVOSELOVA, V.V., tekhn.red.

[Hygienic problems of children and adolescents] Voprosy gigieny detei i podrostkov; trudy. Pod red. A.G.TSeitlina i G.P.Sal'nikovoi. Moskva, Izd-vo Akad.pedagog.nauk RSFSR, 1960. 173 p.
(MIRA 14:1)

1. Nauchnaya konferentsiya po shkol'noy gigiyene. 1958. 2. Institut fizicheskogo vospitaniya i shkol'noy gigiyeny Akademii pedagogicheskikh nauk RSFSR (for TSeytlin).
(CHILDREN--CARE AND HYGIENE)

TSEYTLIN, A.G., red.; TARASOVA, K.V., red.; NOVOSELOVA, V.V., tekhn.red.

[Problems in the prevention of postural disorders in children of preschool and school age] Voprosy profilaktiki narushenii osanki u detei doshkol'nogo i shkol'nogo vozrasta. Pod red. A.G.TSeitlina. Moskva, 1960. 142 p. (MIRA 13:12)

1. Akademiya pedagogicheskikh nauk RSFSR, Moscow. Institut fizicheskogo vospitaniya i shkol'noy gigiyeny.
(Posture)

TSEYTLIN, A.G., prof.

Review of E.N. Iankelevich's book "Physical training for schoolchildren." Pediatriia 37 no.10:87-89 O '59. (MIRA 13:2)
(PHYSICAL EDUCATION FOR CHILDREN)

TSEYTLIN, A.G., nauchnyy sotrudnik; ANTROPOVA, M.V., nauchnyy sotrudnik; IVANOV, V.N., nauchnyy sotrudnik; MIKHAYLOVA, L.V., nauchnyy sotrudnik; SAL'NIKOVA, G.P., nauchnyy sotrudnik; IOFFE, V.G., red.; LAUT, V.G., tekhn.red.

[School hygiene] Shkol'naia gigiena. Pod red. A.G.TSeitlina. Moskva, Izd-vo Akad.pedagog.nauk RSFSR, 1959. 375 p. (MIRA 12:11)

1. Akademiya pedagogicheskikh nauk RSFSR, Moscow. Institut fizicheskogo vospitaniya i shkol'noy gigiyeny. 2. Institut fizicheskogo vospitaniya i shkol'noy gigiyeny Akademii pedagogicheskikh nauk RSFSR (for all except Ioffe, Laut).
(School hygiene)

TSEYTLIN, A.G. EXCERPTA MEDICA Sec 7 Vol.12/6 Pediatrics June 58

1489. PHYSICAL DEVELOPMENT OF CHILDREN OF PRE-SCHOOL AGE
(Russian text) - Tseytlin A.G. - VOPR.OKHR.MATER.I DETS.
1956, 1/4 (68-74)

Presentation of the findings in 5,500 children of pre-school and school ages. The work was necessitated by a need of standards reflecting the actual development of children, as well as by numerous requests from pediatricians. The results are presented in tabular form. (S)

TSEYTLIN, A. I.

Cand Tec Sci, Diss -- "Certain problems in the calculation of beams on an elastic foundation for the effect of pulse loading". Moscow, 1961. 13 pp, 20 cm (Min of Higher and Inter Spec Educ RSFSR. Moscow Order of Labor Red Banner Engr-Cons Inst imeni V. V. Kuybyshev), 180 copies, Not for sale (KL, No 9, 1961, p 185, No 24377). [61-52348]

TSEYTLIN, A.I. (Moskva)

Impulse loads on girders on supports with two elastic characteristics. Stroi. mekh. i rasch. soor. 3 no.1:43-46 '61. (MIRA 14:2)

(Girders) (Strains and stresses)

[illegible] 65/[illegible]

AUTHOR: Tseytlin, [illegible]

TITLE: Integral [illegible] the biharmonic problem on the half plane

[illegible]

TOPIC TAGS: Green function, eigenfunction, differential equation, [illegible]

ABSTRACT: The solution of certain biharmonic and related problems on a half plane or half space (often encountered in elasticity) leads to differential equations containing an operation of the type

[illegible]

The author constructs certain integral transformations (and their inverses) whose kernels are eigenfunctions of the self-adjoint operator generated by [illegible] application is made to a dynamic problem for a semi-infinite [illegible] plate [illegible] edge. Orig. art. has [illegible]

ASSOCIATION: none

Card 1/2

ACCESSION NR: AP5010187

SUBMITTED: 26Aug64

ENCL: [illegible]

SUB CODE: MA, MR

NO REF SOV: 004

OTHER: 000

Card 2/2

L 30376-66 EWP(k)/EWT(d)/EWT(m)/T-2/EWP(w) IJP(c) EM

ACC NR: AP6012545 SOURCE CODE: UR/0040/66/030/002/0259/0270

45

44

B

AUTHOR: Tseytlin, A. I. (Moscow)

ORG: none

TITLE: The method of paired integral equations and paired series and its application to problems of mechanics

SOURCE: Prikladnaya matematika i mekhanika, v. 30, no. 2, 1966, 259-270

TOPIC TAGS: integral equation, Fredholm equation, mechanics, series, orthogonal function, BOUNDARY VALUE PROBLEM, ELASTICITY

ABSTRACT: The characteristics of paired integral equations and paired series of the generalized type are investigated. These equations occur in elasticity theory and hydrodynamics as boundary value problems with movable boundaries. The paired series are represented in the symmetric form

$$\int_{-\infty}^{\infty} \rho(\xi) f(\xi) u(\xi, \eta)\, d\tau(\xi) = g_1(\eta) \qquad (a<\eta<c)$$

$$\int_{-\infty}^{\infty} \rho^{-1}(\xi) f(\xi) u(\xi, \eta)\, d\tau(\xi) = g_2(\eta) \qquad (c<\eta<b),$$

and it is assumed that the functions $\rho(\xi)u(\xi, \eta)$ и $\rho^{-1}(\xi)u(\xi, \eta)$ are orthogonal. This

leads to a linear integral equation of the Fredholm type of the second kind for all x with the continuous symmetric kernel,

$$\Psi(\eta, x) + \int_a^x K(x, \eta_1)\Psi(\eta, \eta_1)\, d\sigma(\eta_1) + K(x, \eta) = 0.$$

The same situation is shown to be true for the paired integral equations

$$\left.\begin{aligned}\int_{-\infty}^{\infty}\rho(\xi)\,[f_1(\xi) + \alpha_1 f_2(\xi)]\,u(\xi, \eta)\,d\tau(\xi) &= g_1(\eta)\\ \int_{-\infty}^{\infty}\rho(\xi)\,[f_1(\xi) + \beta_1 f_2(\xi)]\,u(\xi, \eta)\,d\tau(\xi) &= g_3(\eta)\end{aligned}\right\}\ (a < \eta < c)$$

$$\left.\begin{aligned}\int_{-\infty}^{\infty}\rho^{-1}(\xi)\,[f_1(\xi) + \alpha_2 f_2(\xi)]\,u(\xi, \eta)\,d\tau(\xi) &= g_2(\eta)\\ \int_{-\infty}^{\infty}\rho^{-1}(\xi)\,[f_1(\xi) + \beta_2 f_2(\xi)]\,u(\xi, \eta)\,d\tau(\xi) &= g_4(\eta).\end{aligned}\right\}\ (c < \eta < b)$$

The results are applied to the plane contact problem in the theory of elasticity for the case of an infinite wedge (with polar coordinates) whose tip is pressed in a symmetric rigid press without friction. Orig. art. has: 43 equations.

SUB CODE: 12,20/ SUBM DATE: 22Jun65/ ORIG REF: 008/ OTH REF: 016

TSEYTLIN, A.I. (Moskva)

Use of integral transformations for calculating semi-infinite bars and cylindrical shells. Stroi.mekh. i rasch.soor. 7 no.5:37-42 '65.
(MIRA 18:10)

TSEYTLIN, A.I. (Moskva)

Integral transformations related to the biharmonic problem on a half-plane and a half-space and their applications to problems in the theory of elasticity. Izv. AN SSSR. Mekh. no.1:131-139 Ja-F '65.

(MIRA 18:5)

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S/044/61/000/011/016/049
C111/C444

AUTHOR: Tseytlin, A. I.

TITLE: The impulsive loading of a beam, resting on a base with two elastic characteristics

PERIODICAL: Referativnyy zhurnal, Matematika, no. 11, 1961, 39, abstract 11B193. (Stroit. mekhan. i raschet sooruzh., 1961, no. 1, 43 - 46)

TEXT: The differential equation for the oscillations of an infinite beam resting on a base with two elastic characteristics and, in presence of a length strain, suffering from the effect of a concentrated rectangular impulse, is

$$\frac{\partial^4 y}{\partial x^4} + \frac{1}{a^2}\frac{\partial^2 y}{\partial t^2} + \frac{1}{b^2} y - \frac{1}{c^2}\frac{\partial^2 y}{\partial x^2} = 0,$$

X

(a, b, c are constants). The author obtains the solution of this equation in the integral form. For the bending and the bending moment in the dangerous cross section there are given expressions in the form of rapidly converging power series. Graphical representations of the maximal values of the bending and of the bending moment are given

Card 1/1 [Abstracter's note: Complete translation.]

TSEYTLIN, A.I. (Moskva)

Effect of displacement and inertia of rotation on the vibrations of a beam lying on an elastic base. Prikl. mat. i mekh. 25 no.2: 362-364 Mr-Ap '61. (MIRA 14:5)
(Deformations (Mechanics)) (Elasticity)

KORENEV, B.G.; TSEYTLIN, A.I.(Moskva)

Designing a beam on an elastic foundation for the effect of a brief and suddenly applied load. Stroi. mekh. i rasch. scor. 4 no.3:25-30 '62. (MIRA 15:6)

(Beams and girders)

TSEYTLIN, A.I.

Impact loading of an infinite beam lying on an elastic support.
Trudy TSNIISK no.2:5-32 '61. (MIRA 16:8)
(Beams and girders)

TSEYTLIN, A.I.

Elastoplastic deformations of an infinite beam under impact loading. (MIRA 16:8)
Trudy TSNIISK no.2:33-50 '61.
(Beams and girders)

TSEYTLIN, A.L., inzh.

Continuous spans of prestressed precast concrete assembled by the balanced erection method. Avt. dor. 27 no.4:23-24 Ap '64. (MIRA 17:9)

FISHKIS, R.I., inzh.; TSEYTLIN, A.L. inzh.

Specifications for the design of railroad, highway and city bridges and culverts. Avt. dor. 26 no.5:31-32 My '63. (MIRA 16:7)

(Bridges—Design and construction)
(Culverts)

FISHKIS, R. I., inzh.; TSEYTLIN, A. L., inzh.

Bridges with framed-continuous structure. Avt. dor. 25 no.10: 20-22 O '62. (MIRA 15:10)

(Bridges, Concrete)

PAL'NIKOV, Ya.A. (Moskva); TSEYTLIN, A.I. (Moskva)

Some integral transformations used in problems in the theory of elasticity. Izv. AN SSSR Mekh. i mashinostr. no.[illegible] S-O '6[illegible]
(MIRA 18:[illegible])

TSEYTLIN, A.I.

Some transformations proposed by Hankel. Dif. urav. 1 no.12: 1647-1651 D '65. (MIRA 18:12)

1. TSentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh konstruktsiy imeni Kucherenko. Submitted April 26, 1965.

FISHKIS, R.I., inzh.; TSEYTLIN, A.L., inzh.

Medium-size bridges at the Moscow ring highway. Avt. dor. 26 no.6:15-16 Je '63. (MIRA 16:8)

(Moscow--Bridges, Concrete)

ACC NR: AP6036404 SOURCE CODE: UR/0148/66/000/011/0105/0109

AUTHOR: Tseytlin, A. M.; Zubov, V. Ya.; Doroshek, S. I.

ORG: Ural Polytechnic Institute (Ural'skiy politekhnicheskiy institut)

TITLE: Effect of titanium on the physical properties of iron-nickel alloys

SOURCE: IVUZ. Chernaya metallurgiya, no. 11, 1966, 105-109

TOPIC TAGS: iron nickel alloy, titanium, metal physical property, magnetic property, Curie point, Young modulus

ABSTRACT: Anomalies of physical properties in binary invars correspond to the region of concentrations adjoining the boundary of irreversible $\gamma - \beta$ transformation. It has been shown (S. I. Doroshek. FMM, 1964, t. 17, vyp. 14, s. 638) that in certain cases a relationship exists between the effect of alloy elements on the stability of austenite and the position of the anomalies. In this connection, the authors investigate the variation in the concentration dependencies of a number of the physical characteristics of invars under the influence of titanium, which is widely employed as a hardening additive in alloys with special elastic properties. Since under conditions of dispersion hardening the influence of titanium on such anomalies

Card 1/4 UDC: 669.15-194.24-12-18:539.26:669.295

ACC NR: AP6036404

is largely determined by the change in the composition of the solid solution with segregation or dissolution of the excess intermetallic compound, single-phase Fe-Ni-Ti alloys (30-46 wt.% Ni; 0.6, 2.2 and 4% Ti plus 0.02-0.05% each of C, Mn, Si, Al, Cr, Co, P, S, with Fe as the remainder) in deformed and recrystallized state were investigated. Measurements of physical properties (Young's modulus, temperature variation, Curie point) were performed on specimens of 5 mm diameter. The lattice parameter of the γ-solid solution was measured by the ionization method on recording the line (311); the presence of the α-phase was fixed according to the line (211). Findings: the Curie point falls with increasing content of Ti (Fig. 1) and hence

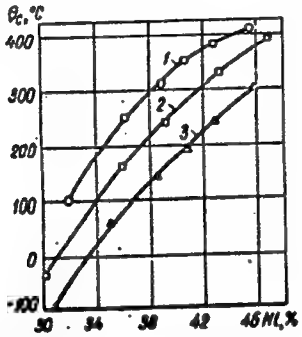


Fig. 1. Effect of Ti on Curie point

1 - 0.6% Ti; 2 - 2.2% Ti; 3 - 4% Ti

Card 2/4

ACC NR: AP6036404

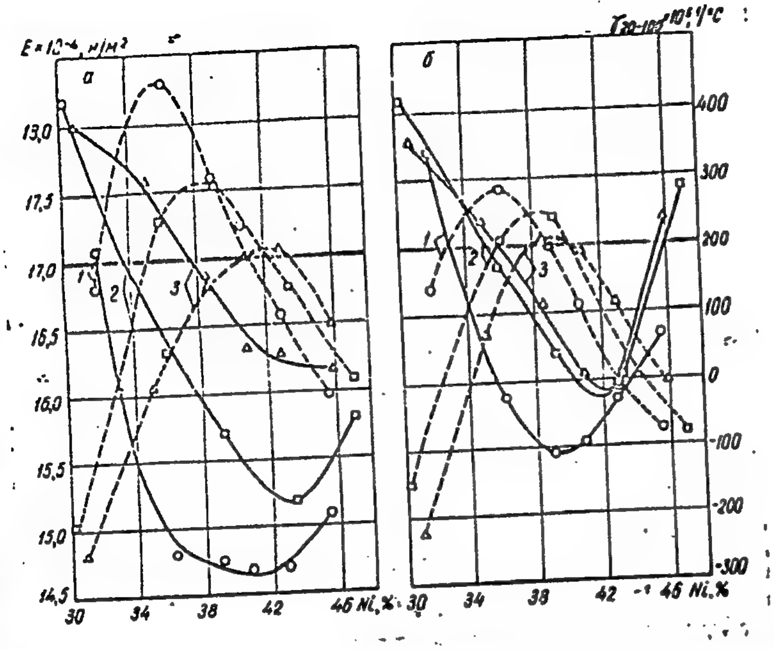


Fig. 2. Concentration dependencies of Young's modulus E and its temperature coefficient γ in Fe-Ni-Ti alloys following quenching from 1000°C (a) and 22% deformation (b): 1 - 0.6% Ti; 2 - 2.2% Ti; 3 - 4% Ti; ——— for E; - - - - for γ

Card 3/4

ACC NR: AP6036404

Fe-Ni-Ti alloys must have a higher Ni content in order to display the same ferromagnetic properties as binary invars. Ti weakens the elastic anomaly associated with strictional changes in the dimensions of ferromagnetics at temperatures below the Curie point. Thus an increase in Ti content leads to an appreciable rightward shift of Young's modulus E and of the maximum of the thermoelastic coefficient γ in recrystallized state (Fig. 2). Since the addition of Ti reduces the Curie point and magnetization saturation, it also must reduce the linear magnetostriction (proportional to the square of magnetization); this apparently accounts for the partial elimination of elastic anomaly under the influence of Ti; this also accounts for the anomaly of the lattice parameter. Orig. art. has: 3 figures.

SUB CODE: [illegible] 11, 20/ SUBM DATE: 02Apr66/ ORIG REF: 005/ OTH REF: 005

ACCESSION NR: AR4042237 S/0124/64/000/006/V078/V078

SOURCE: Ref. zh. Mekhanika, Abs. 6V647

AUTHOR: Doroshek, S. I.; Tseytlin, A. M.

TITLE: Relaxation stability of certain iron-nickel alloys

CITED SOURCE: Sb. Relaksats. yavleniya v met. i splavakh. M., Metallurgizdat, 1963, 326-331

TOPIC TAGS: iron nickel alloy, stress relaxation, relaxation stability

TRANSLATION: Investigates stress relaxation in Ni-Cr-alloy (Ni-Span) and nonmagnetic rust-proof Ni-Cr-Mo-alloy N36KhTYuM after riveting and tempering.

SUB CODE: MM, AS ENCL: 00

Card 1/1

[illegible]

ACCESSION NR: AT4043139 S/0000/63/000/000/0326/0331

AUTHOR: Doroshek, S.I., Tseytlin, A.M.

TITLE: **Relaxation stability of several iron-nickel alloys**

27 21

SOURCE: Vsesoyuznaya konferentsiya po relaksatsionny*m yavleniyam v metallakh i splavakh. 3d, Voronezh, 1963. Relaksatsionny*ye yavleniya v metallakh i splavakh; trudy* konferentsii. Moscow, Metallurgizdat, 1963, 326-331 (Relaxation phenomena in metals and alloys [illegible])

TOPIC TAGS: iron alloy, nickel containing alloy, stress relaxation, relaxation stability, alloy steel/Nispen*

ABSTRACT: The requirements of modern instruments have increased the need for certain parts made of elastic and sensitive alloys. Among these alloys are Fe-Ni base alloys with chromium, molybdenum, titanium and aluminum. Nispen* or N41Kh7, [illegible] 62%) has a minimum temperature [illegible] and good [illegible] of the modulus of elasticity at [illegible] in a nonmagnetic [illegible] alloy N36KhTYuM (Ni-35.[illegible], Cr-1[illegible]

Card 1/3

*Ni-Span type alloy

L 15002-65

ACCESSION NR: AT4048139

high strength and elastic properties. It is widely used for bellows, membranes and [illegible] kinds of springs. The required combination of physical and elastic properties [illegible] and tempering [illegible] hardened [illegible] [illegible] [illegible] stress and [illegible] elastic properties [illegible] [illegible] [illegible] [illegible] tempering [illegible] [illegible] [illegible] sion hardening. The tests showed [illegible] but also by various structural temperatures is determined not only by [illegible] changes during testing, in other words by a metastable structure. It may be considered that the decreased stress in cold [illegible] and less tempered bands is to a great extent due to structural transformations caused by rest and aging during high temperature tests. The tests also indicated that the variation of relaxation stability during

Card 2/3

L 15002-65

ACCESSION NR: AT4048139

tempering of the hardened material is very closely connected with the rest processes which increase the degree of structural stability and the yield point. It is known that one of the best ways of improving the relaxation stability at high temperatures is the addition of [illegible] element. It was therefore assumed that the N36KhTYuM alloy might have [illegible] stability. Tests showed that this is true, except for the ultimate [illegible]. It was also determined [illegible] attaining high relaxation [illegible] in relaxation stability. On the basis of these tests it is concluded that the upper limit of working temperatures for steel is 200C, for N41KhT — 300C, for N36KhTYuM — 360C. [illegible] investigations should be oriented toward the design of [illegible] N41KhTYu [illegible] minimum temperature coefficient [illegible] of the modulus of elasticity up to [illegible]. Orig. art. has 4 figures [illegible]

ASSOCIATION: Ural'skiy institut chernykh metallov (Ural Institute of Ferrous Metals)

SUBMITTED: 10Nov63 ENCL: 00 SUB CODE:

NO REF SOV: 010 OTHER: 000

Card3/3

EWP(k)/EWP(b) Pf-4

AUTHOR: Dorochek, S. I.; Tseytlin, A. M.

TITLE: [illegible] nickel alloys

CITED SOURCE: Sb. Relaksats. yavleniya v met. i splavakh. M., Metallurgizdat. 1963, 326-331

TOPIC TAGS: relaxation stability, iron based alloy, nickel containing alloy, stress relaxation

TRANSLATION: Stress relaxation was investigated in Fe-Ni-Cr-alloy N41KhT (Ni-pan) after work hardening and [illegible] of Fe-Ni-Cr-Mo-alloy N36KhTYuM [illegible] properties of given alloys [illegible]

obtained from wire [illegible] hardened samples were [illegible] wire was subjected [illegible]

Card 1/3

L 12969-65
ACCESSION NR: AR4041621

in melts of salts at 300 - 800° for 1 hour, after which mechanical properties on
extension and bend, hardness, Curie point and saturation magnetization were
measured. Tests on relaxation [illegible] were conducted at 300 - 500° by means
of loading the tape in rings with initial stress not exceeding σ_e. Maximums of
hardness, σ_e and [illegible] in alloy N41KhT after tempering,
at 575 - 600°, where almost complete separation of work hardening phase occurs.
the same temperatures correspond to minimum of curves of Curie points and satura-
tion magnetization. Maximum relaxation stability for alloys with 2.2% Ti and
[illegible] where-
[illegible] Ti is observed at [illegible] corresponds to highest [illegible] In alloy
[illegible]
[illegible]
reached significantly earlier [illegible] of hardened alloy N41KhT is connected
of relaxation stability during tempering of hardened alloy [illegible] of stability of structure
with course of processes of rest, increasing the degree of stability of structure
and σ_e. Hardness, σ_e and relaxation stability of alloy N36KhTYuM, differing from
alloy N41KhT by [illegible] presence of Mo, turns out to be
higher. [illegible] of tempering, ensuring maxi-
mum work hardening [illegible] processes of dispersion hardening

Card 2/3

L 12969-65
ACCESSION NR: AR4041621

to 600 - 650°. Minimum of removed stress during relaxation of stresses for alloy N36KhTYuM is observed at 550 - 600°, and high relaxation stability after tempering at these temperatures is kept to 450 - 500°. Shift of maximum of relaxation stability in the direction of higher temperatues of tempering is connected with difficulty, caused by alloying, of course of processes of rest and formation of stable structure, combining them with separation of work hardening phase during dispersion hardening. Increase of temperature of tempering above 600 - 650° leads to sharp lowering of relaxation stability, especially at increased test temperatures. Bibliography: 10 references.

SUB CODE: MM, AS ENCL: 00

Card 3/3

ACC NR: AP7002742 SOURCE CODE: UR/0126/66/022/006/0917/0923

AUTHOR: Tseytlin, A. M.; Zubov, V. Ya.

ORG: Ural Polytechnic Institute im. S. M. Kirov (Ural'skiy politekhnicheskiy institut)

TITLE: Effect of plastic deformation on the physical properties of ferronickel alloys treated with titanium

SOURCE: Fizika metallov i metallovedeniye, v. 22, no. 6, 1966, 917-923

metal physical property, magnetic property, elastic property,

TOPIC TAGS: ~~ballistic~~ magnetization saturation ~~meter~~, x ray spectral analyzer, plastic deformation, iron nickel alloy, titanium / ~~BU-3 ballistic magnetization saturation meter~~, URS-50IM x ray spectral analyzer

ABSTRACT: Treatment of invars with additional alloy elements is known to markedly influence the effect of plastic deformation on physical properties. In this connection the authors investigated the effect of plastic deformation on the magnetic elastic properties and lattice constant of austenite of Fe-Ni (30-47% Ni) alloys treated with 0.6, 2.2 and 4 wt.% Ti. Alloys of this kind, hardenable by aging following quenching or plastic deformation, are widely used in practice to attain a near-zero thermoelastic coefficient, a low coefficient of thermal expansion,

UDC: 669.15:539.37

Card 1/4

ACC NR: AP7002742

etc. Wire specimens (diameter 5 mm) and strip (0.32x4.0 mm) of the alloy were subjected to plastic deformation by homogenizing (water quenching from 1000°C) and drawing with 22, 52 and 84% reduction in area, after which they were heated to 1000°C for 2 hr and again water-quenched (to prevent the segregation of excess intermetallic compounds). Magnetization saturation I_s was measured with the aid of a BU-3 ballistic device; electrical resistivity ρ, by means of a double-bridge circuit; the ferromagnetic Curie point θ_c, according to the sloping segment of the magnetization-temperature curve; and Young's modulus E, according to the resonance frequency of transverse oscillations. The lattice constant a of austenite was determined with the aid of Fe K_α-radiation (URS-50IM device) on recording the {311} line. Findings: plastic deformation markedly increases I_s and θ_c, this increase being the greater the higher the Ti content and the lower the Ni content and (for θ_c) the higher the degree of deformation of the alloy are. By contrast, ρ decreases with increase in Ti content and decrease in Ni content. The marked increase in θ_c in low-Ni invars containing 4% Ti and having an 84% deformation causes an anomalous change in the temperature dependence of Young's modulus E (Fig. 1). In the alloy with 0.6% Ti, as in binary invars, plastic deformation reduces the positive slope of the E-temperature curve, whereas in the high-nickel (35% Ni) alloy with 4% Ti (N35T4 alloy) 84% deformation increases θ_c by roughly 70°, which increases the positive change in E with temperature and markedly broadens the temperature range of the anomaly. Thus it may be said that plastic

ACC NR: AP7002742

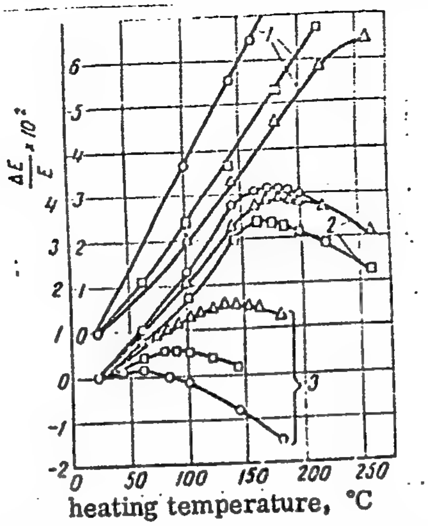


Fig. 1. Relative increase in Young's modulus on heating of specimens of the alloys N36T (1), N36T2 (2) and N35T4 (3) following various types of thermomechanical treatment

Δ - 84% deformation; □ - 22% deformation;
O - 22% deformation and quenching

deformation enhances the "invarness" of Fe-Ni-Ti alloys. All these changes in physical properties apparently are associated with the concentration anomalies in invars, due to the special nature of these alloys. It appears that the negative exchange interaction between neighboring Fe ions occurring at Ni concentrations of less than 40% leads to the formation and growth of antiferromagnetic regions with an extremely low Neel point and this results in the sharp de-

Card 3/4

ACC NR: AP7002742

crease in magnetization and Curie point with decrease in Ni content in the invars. Orig. art. has: 5 figures, 2 tables.

SUB CODE: 11 , 20/ SUBM DATE: 09Aug65/ ORIG REF: 012/ OTH REF: 008

Card 4/4

ACCESSION NR: AR4027666 S/0277/64/000/002/0029/0029

SOURCE: RZh. Mashinostroital'ny*ye materialy*, konstruktsii i raschet detaley mashin, Abs. 2.48.203

AUTHOR: Doroshek, S. I.; Tseytlin, A. M.

TITLE: On the possibility of magnetic control of the tensile strength of a spring strip

CITED SOURCE: Tr. Ural'skogo n.-i. in-ta chern. met., v. 2, 1963, 211-218

TOPIC TAGS: magnetic control, spring strip, general-purpose coercitimeter, heat treatment, residual austenite, magnetic characteristic, annealing, tensile strength, ultimate strength

TRANSLATION: The author studied the possibility of magnetic control of the tensile strength of a spring strip of 0.32 x 6.75 mm size made out of EI142 steel (composition in %: C-0.70, Si-1.75, Cr-0.3, Mn-0.4) by means of general purpose coercitimeter of the Institute of Metal Physics of the SSSR Academy of Sciences and the effect of heat treatment and thickness on the relationship between the strength and magnetic characteristics of the strip. Magnetic control σ_b of

Card 1/2

ACCESSION NR: AR4027666

the steel band is possible with rigorously constant adherence to heat-treatment technology, providing for a minimum quantity of residual austenite before annealing. The presence of residual austenite in the steel disturbs the relationship between the strength and magnetic characteristics when the annealing temperature is changed, thus limiting the sensitivity of the coercitimeter.

DATE ACQ: 06Mar64 SUB CODE: PH ENCL: 00

Card 2/2

TSEYTLIN, A. M.

Tseitlin, A M ed.

Рудничный транспорт; сборник трудов. Харьков, Гос. научно-техн. изд-во Украины, 1936-

v. illus. 26 cm. irregular.

Mining transport; Collection of Works

1. Mine haulage. I. Dnepropetrovsk, Russia. Dnepropetrovskii gornyi institut. II. Title. *Title transliterated:* Rudnichnyi transport.

TN831.T8 50-36424

(5)

Library of Congress (1)

ZUBOV, V. Ya.; GRACHEV, S.V.; TSEYTLIN, A.M.

Stress relaxation during the tempering of high-speed steel. Fiz. met. metalloved 11 no.3:465-466 Mr '61. (MIRA 14:3)

1. Ural'skiy politekhnicheskiy institut im. S. M. Kirova.
(Tool steel—Heat treatment)
(Strains and stresses)

DOROSHEK, S.I.; TSEYTLIN, A.M.; Prinimali uchastiye: ZHULAY, A.A., inzh.;
LUKINA, N.P., inzh.; LOSEV, O.I., inzh.

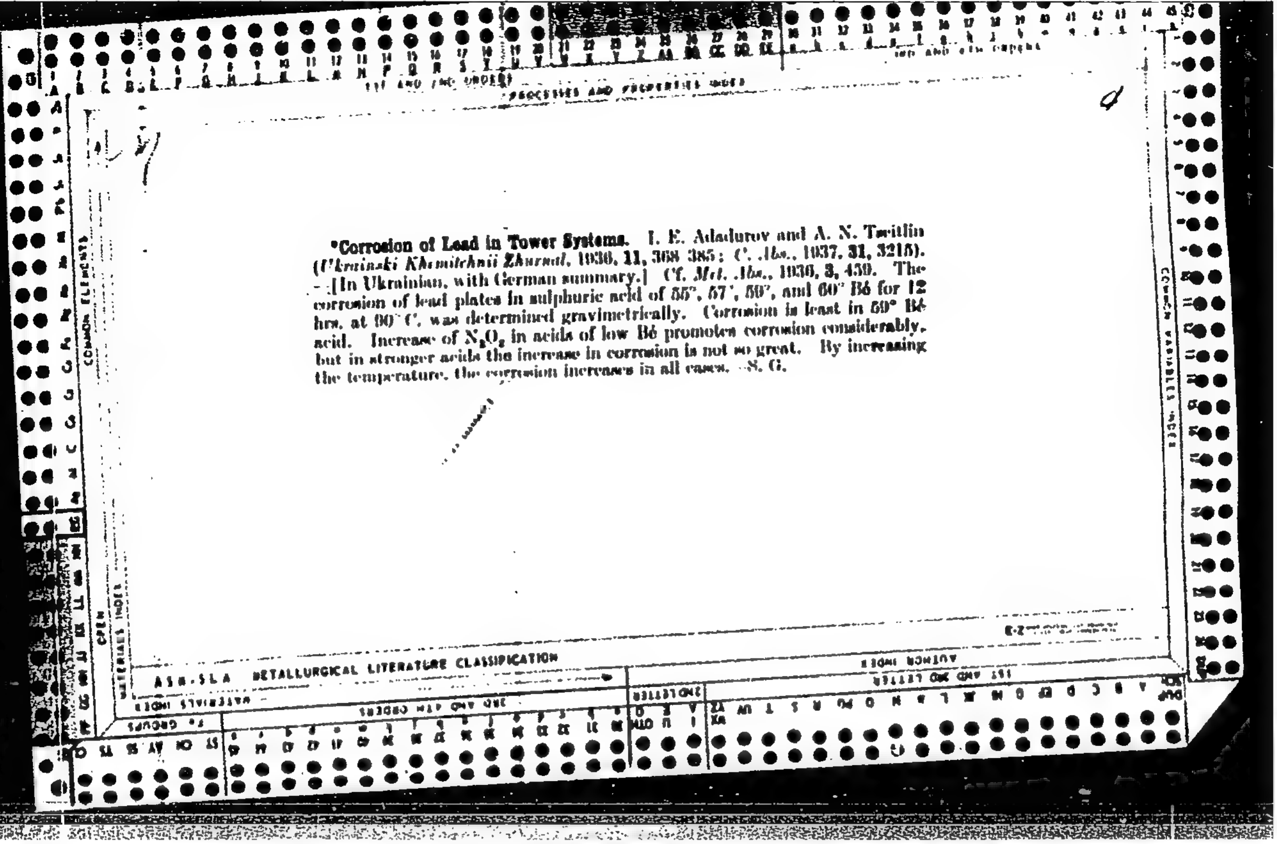
Effect of temper coloring and thermal stabilization on the properties of spring bands. Stal' 22 no.2:161-162 F '62.
(MIRA 15:2)

1. Ural'skiy nauchno-issledovatel'skiy institut metallov (for Doroshek, TSeytlin).
(Steel--Heat treatment)
(Springs (Mechanism))

TSEYTLIN, A.M.

Build without leaving anything unfinished. Stroi. truboprov. 7 no.5:26 My '62. (MIRA 16:6)

1. Nachal'nik stroitel'nogo upravleniya No.6 Soyuzprovodmekhanizatsiya, Omsk.
(No subject headings)



•Corrosion of Lead in Tower Systems. I. E. Adadurov and A. N. Tsvitlin (*Ukrainski Khemichnii Zhurnal*, 1936, **11**, 368-385; *C. Abs.*, 1937, **31**, 3215). [In Ukrainian, with German summary.] Cf. *Met. Abs.*, 1936, **3**, 459. The corrosion of lead plates in sulphuric acid of 55°, 57°, 59°, and 60° Bé for 12 hrs. at 90° C. was determined gravimetrically. Corrosion is least in 59° Bé acid. Increase of N_2O_3 in acids of low Bé promotes corrosion considerably, but in stronger acids the increase in corrosion is not so great. By increasing the temperature, the corrosion increases in all cases. —S. G.

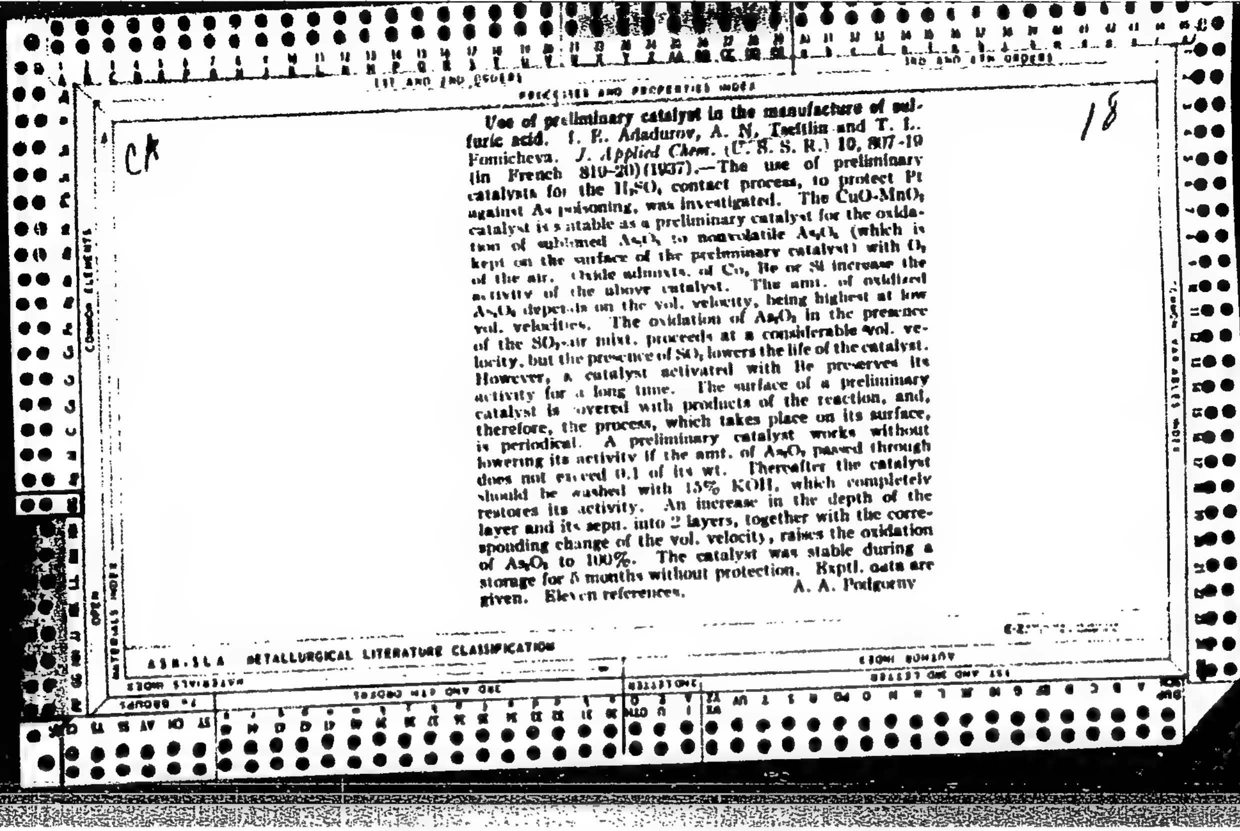
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

18

The use of iron tubes in the tower process of sulfuric acid production. I. E. Adadurov and A. N. Tsvilin. *Ukrain. Khem. Zhur.* 11, 408-13(in German 413-14) (1936). Corrosion of Fe in H_2SO_4 of 57-60° Bé. is small and comparable to Pb corrosion under the same conditions. Increase of N_2O_3 promotes corrosion. By raising the temp. in the presence of N_2O_3 the corrosion does not increase. For use in the production zone, the Fe tubes are more resistant to corrosion than Pb, but in the absorption zone, Pb is more resistant. B. Z. Kamich

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

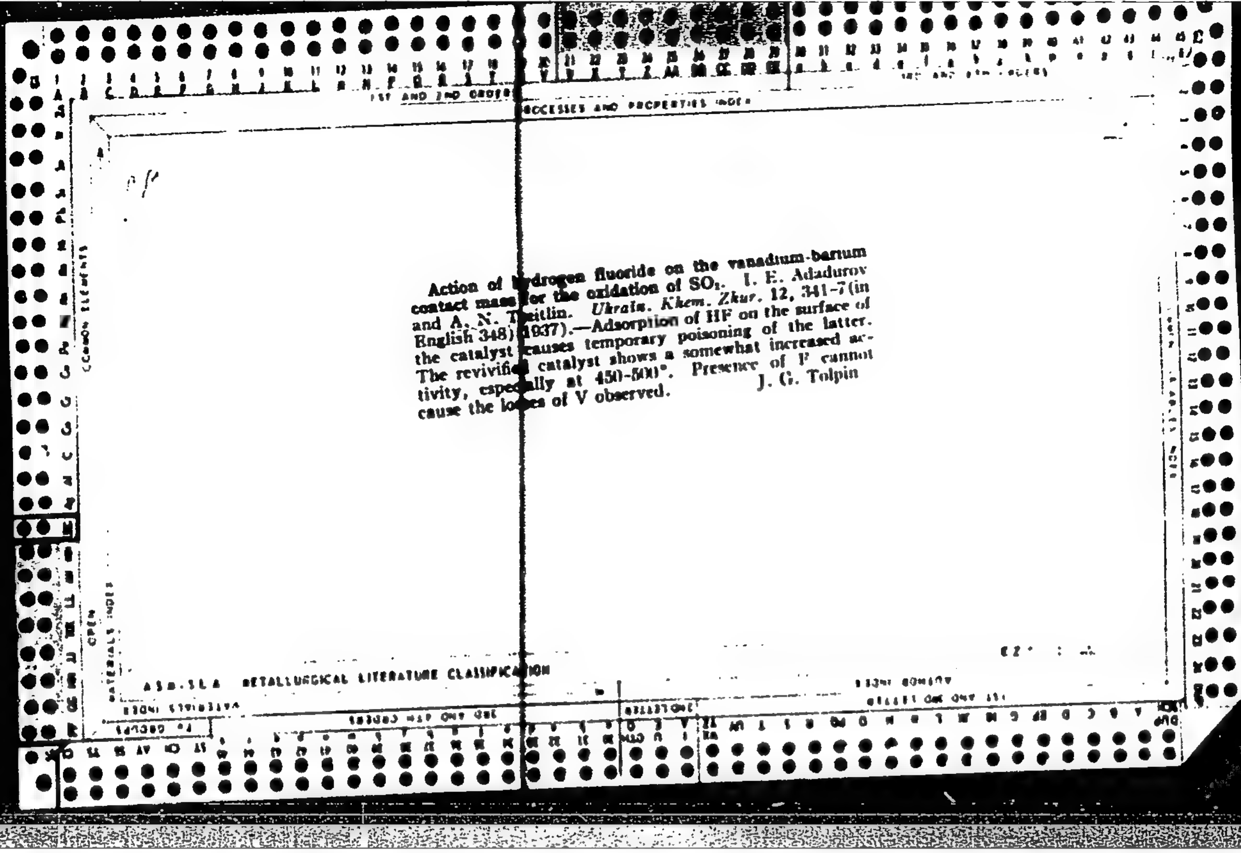
CK

18

Use of preliminary catalyst in the manufacture of sulfuric acid. I. E. Adadurov, A. N. Tseitlin and T. L. Fomicheva. *J. Applied Chem.* (U. S. S. R.) 10, 807-19 (in French 819-20)(1937).—The use of preliminary catalysts for the H_2SO_4 contact process, to protect Pt against As poisoning, was investigated. The CuO-MnO_2 catalyst is suitable as a preliminary catalyst for the oxidation of sublimed As_2O_3 to nonvolatile As_2O_5 (which is kept on the surface of the preliminary catalyst) with O_2 of the air. Oxide admixts. of Co, Be or Si increase the activity of the above catalyst. The amt. of oxidized As_2O_3 depends on the vol. velocity, being highest at low vol. velocities. The oxidation of As_2O_3 in the presence of the SO_2-air mixt. proceeds at a considerable vol. velocity, but the presence of SO_2 lowers the life of the catalyst. However, a catalyst activated with Be preserves its activity for a long time. The surface of a preliminary catalyst is covered with products of the reaction, and, therefore, the process, which takes place on its surface, is periodical. A preliminary catalyst works without lowering its activity if the amt. of As_2O_3 passed through does not exceed 0.1 of its wt. Thereafter the catalyst should be washed with 15% KOH, which completely restores its activity. An increase in the depth of the layer and its sepn. into 2 layers, together with the corresponding change of the vol. velocity, raises the oxidation of As_2O_3 to 100%. The catalyst was stable during a storage for 5 months without protection. Exptl. data are given. Eleven references.

A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



1ST AND 2ND ORDER
PROCESSES AND PROPERTIES INDEX
COMMON ELEMENTS
MATERIALS INDEX
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Action of hydrogen fluoride on the vanadium-barium contact mass for the oxidation of SO$_2$. I. E. Adadurov and A. N. Tseitlin. *Ukrain. Khem. Zhur.* 12, 341-7 (in English 348) (1937).—Adsorption of HF on the surface of the catalyst causes temporary poisoning of the latter. The revivified catalyst shows a somewhat increased activity, especially at 450-500°. Presence of F cannot cause the losses of V observed. J. G. Tolpin

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

CA

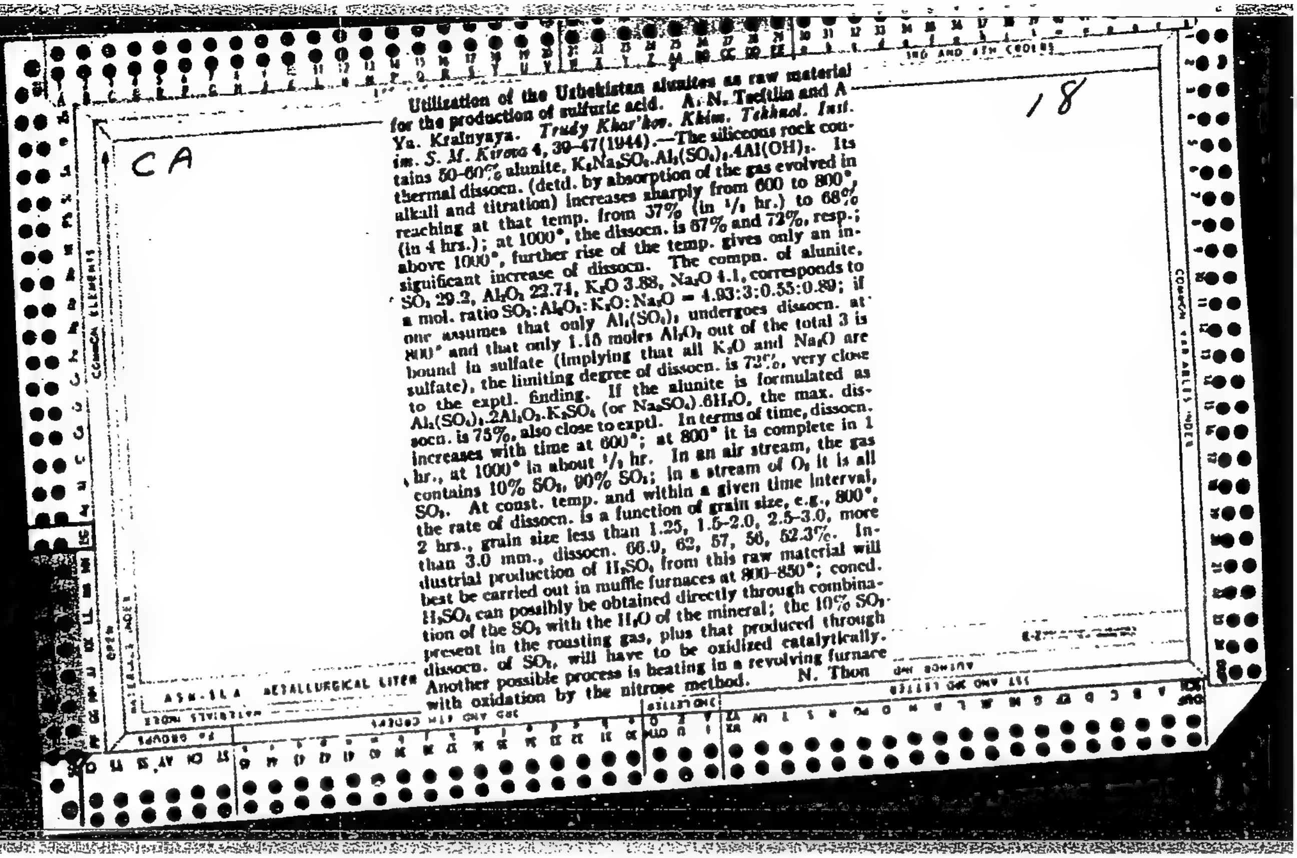
18

PROCESSES AND PROPERTIES INDEX

Absorption of sulfur trioxide in sulfuric acid at various temperatures of the gas. A. N. Tseitlin and L. M. Baulevskaya. *Trudy* ~~Khar'kov. Khim.-Tekhnol.~~ *Inst. im. S. M. Kirova* No. 2, 100-5(1939).—The degree of SO_3 absorption by surface contact with H_2SO_4 decreases from 94.0% at 20° to about 48% at 58° and then increases to 91.5% at 150°. By filling the tower with glass beads, the degree of absorption dropped somewhat with increasing temp., but despite the temp. interval of 20-200°, the decrease was only 2-5.44%. The expts. indicate that in large-scale plants it is not necessary to cool the gases coming from the contact system, but these, at a temp. of 150-180°, can be absorbed directly. It is only necessary to increase the spray of cold acid in the first absorber.

B. Z. Kamich

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

18

Utilization of the Uzbekistan alunites as raw material for the production of sulfuric acid. A. N. Tsefilin and A. Ya. Krainyaya. *Trudy Khar'kov. Khim. Tekhnol. Inst. im. S. M. Kirova* 4, 39-47(1944).—The siliceous rock contains 50-60% alunite, $K_2Na_2SO_4.Al_2(SO_4)_3.4Al(OH)_3$. Its
thermal dissocn. (detd. by absorption of the gas evolved in
alkali and titration) increases sharply from 600 to 800°,
reaching at that temp. from 37% (in $^1/_2$ hr.) to 68%
(in 4 hrs.); at 1000°, the dissocn. is 67% and 72%, resp.;
above 1000°, further rise of the temp. gives only an in-
significant increase of dissocn. The compn. of alunite,
SO_3 29.2, Al_2O_3 22.74, K_2O 3.88, Na_2O 4.1, corresponds to
a mol. ratio $SO_3:Al_2O_3:K_2O:Na_2O$ = 4.93:3:0.55:0.89; if
one assumes that only $Al_2(SO_4)_3$ undergoes dissocn. at
800° and that only 1.16 moles Al_2O_3 out of the total 3 is
bound in sulfate (implying that all K_2O and Na_2O are
sulfate), the limiting degree of dissocn. is 72%, very close
to the exptl. finding. If the alunite is formulated as
$Al_2(SO_4)_3.2Al_2O_3.K_2SO_4$ (or Na_2SO_4).$6H_2O$, the max. dis-
socn. is 75%, also close to exptl. In terms of time, dissocn.
increases with time at 600°; at 800° it is complete in 1
hr., at 1000° in about $^1/_2$ hr. In an air stream, the gas
contains 10% SO_3, 90% SO_2; in a stream of O_2 it is all
SO_3. At const. temp. and within a given time interval,
the rate of dissocn. is a function of grain size, e.g., 800°,
2 hrs., grain size less than 1.25, 1.5-2.0, 2.5-3.0, more
than 3.0 mm., dissocn. 66.9, 62, 57, 56, 52.3%. In-
dustrial production of H_2SO_4 from this raw material will
best be carried out in muffle furnaces at 800-850°; concd.
H_2SO_4 can possibly be obtained directly through combina-
tion of the SO_3 with the H_2O of the mineral; the 10% SO_2
present in the roasting gas, plus that produced through
dissocn. of SO_3, will have to be oxidized catalytically.
Another possible process is heating in a revolving furnace
with oxidation by the nitrose method. N. Thon

CA

COMMON ELEMENTS

OPEN

MATERIALS INDEX

PROCESSES AND PROPERTIES INDEX

The process of combustion of sulfur. A. N. Tishlin and A. Ya. Krainyaya. *Trudy Khar'kov. Khim.-Tekhnol. Inst. im. S.M. Kirova* 5, 87-103(1945)(in Russian).—(1) Rates of evapn. of liquid S were measured, by weighing, in 20-min. runs in a stream of air (in N_2 above 200°) flowing at v = 2, 3, 4, and 6 l./min.; only at the highest v is it necessary to pre-heat the air; pre-heating of the S should be done in the thermostat itself, for not over 10 min.; losses of S on cooling are not over 1-2%, the reproducibility 5-6%. From the amt. G of S evapd. in τ min. from a surface area f(= 8.1(sq. cm.)) the coeff. of evapn. is given by Dalton's formula $kf = G/\tau(p-p')$, where p = equil. vapor pressure of S at the given temp., p' = the prevailing partial pressure of S; the coeff. of intensity of evapn. is $k' = G/f\tau$. At const. v, k decreases with rising temp., k' increases; e.g., at 140, 200, 220, 280°, v = 2, kf = 1.0, 0.58, 0.34, 0.25 l./mm. Hg/hr., k' = 0.070, 0.762, 1.004, 4.760 g./sq.m./hr.; at 140, 180, 200, 220, 250°; v = 6, kf = 2.36, 1.40, 1.47(!), 0.72, 0.91 (!), k' = 0.181, 0.810, 1.320, 2.170, 7.360; the decrease of k with rising temp. is evidently due to the fact that $(p-p')$, i.e., the driving force of the evapn., increases faster than G; it indicates that the thickness of the gaseous diffusion layer over the liquid S increases with rising temp. and can be linked to some extent with the increase of the viscosity of the liquid. Owing to the deviations of k, its dependence on the temp. cannot very well be represented by a general formula of the type $\log K = (A/T) + B$; smoothing the deviations, it is very roughly $\log kf = (1200/T) - 5.5$; but the change of k' can be expressed, at const. v, by formulas $\log k' = a \log t - b$, with the values of a and b: 6 and 14, 6.5 and 14.84, 6.4 and 14.48, for v = 2, 4, 6, resp.; at const. temp., one has $k' = mv^n$, with the values of m and n: 0.042 and 0.82, 0.27 and 0.69, 0.45 and 0.78, 0.63 and 0.7, 2.21 and 0.07, at 140, 180, 200, 220, 280°, resp.; plots of the lines $\log k'$ against $\log v$ at different temps. show them to be very nearly parallel, with the striking exception of the line for 180° which may be linked with the max. of the viscosity of liquid S at that temp. (2) Rates of combustion of S vapor were measured at 600, 800, and 970-990°, in a quartz tube in a combustion furnace connected with the evapn. furnace (kept at t_e = 140, 160, 180, 200, or 300°), in 20-min. runs, v = 2 l./min. and the const. calcd. by $k'' = (2.3/\tau) \log [1/(1-x)]$ where x = fraction of S reacted, detd. by titration of the SO_2 formed. Only at about 1000° is the combustion nearly complete, leaving 3-4% of the S unreacted; at lower temps. only 70-80% is burned. Plots of $\log k''$ against $1/T$ are straight lines for each t_e; from data at t_e = 140°, one has $\ln k'' = 5.12 - 8700/RT$ (T = abs. temp. of combustion) 8700 cal./mole being the activation energy E; this permits calcn. of x at a given moment by $\log(1-x) = -k''\tau/2.3$. Data show that the degree of combustion falls markedly with rising t_e, e.g., from 96.3 to 80% between t_e 140 and 180°, in combustion at 1000°; this fall is more pro-

2

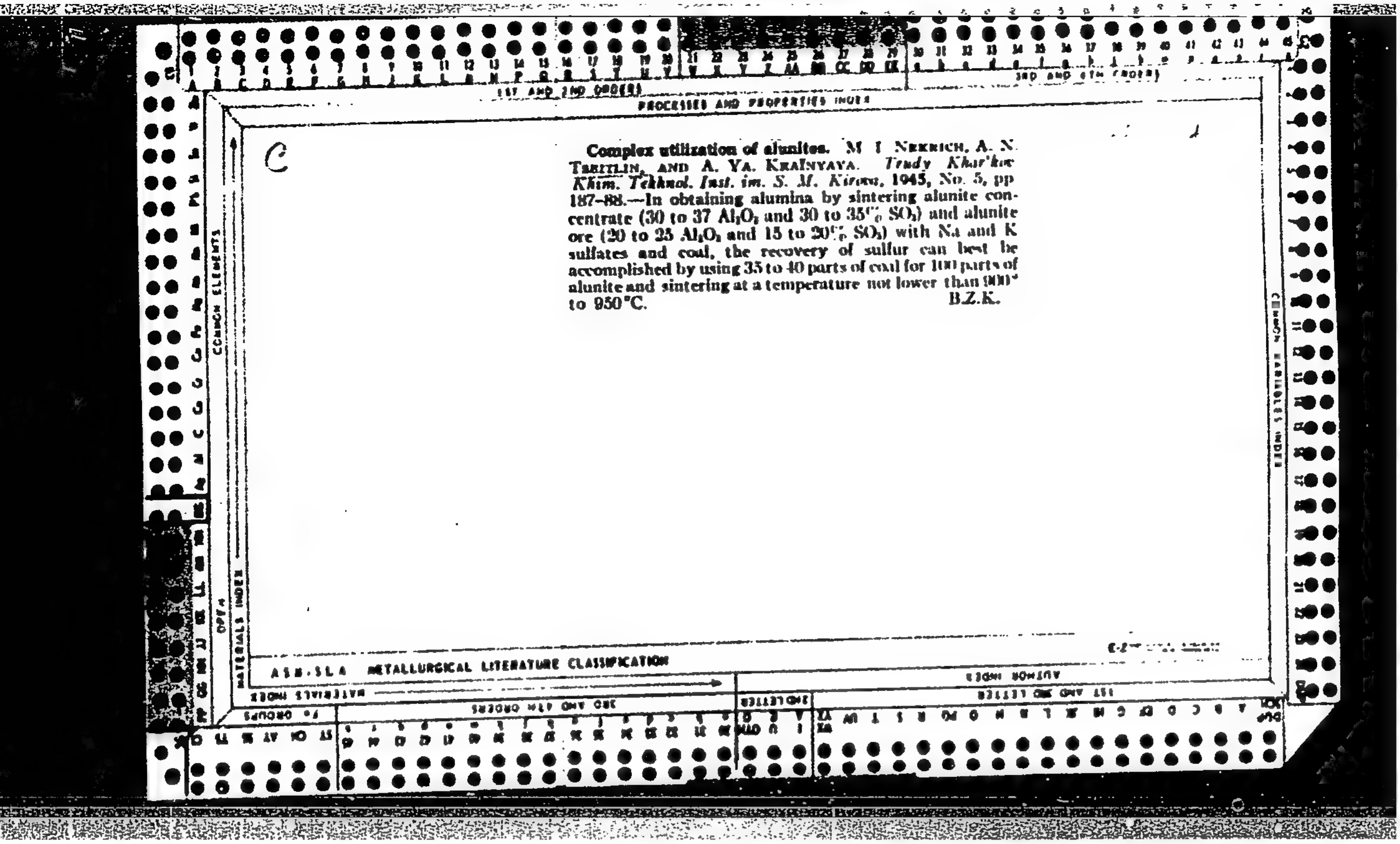
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

AUTHOR INDEX

COMMON VARIABLES

nounced at higher temps. of combustion, thus, it is 33.3% at 1000° but only 6% at 600°; likewise, with t_e increasing from 140 to 180°, the const. k'' decreases 2.5 times at 1000° but only 1.18 times at 600°; for $t_e = 180°$, the formula is ln $k'' = 2.48-4400/RT$, i.e., E is only 4400 cal. as against 8700 for $t_e = 140°$. Plots of log k'' against $1/T$ show again a striking anomaly for the line of $t_e = 180°$ which does not fit the pattern of the lines $t_e = 140$, 160, and 200°; although the latter tend to converge in the direction of increasing $(1/T)$, the t_e 180° line starts *below* the 200° line (too low k'' for the given temps.) and crosses it before reaching its normal position between the 160° and the 200° lines. Also, the fall of k'' with increasing t_e is slowed down distinctly between t_e 180° and 200°. With the S being evapd. in a stream of N_2 ($v = 2$), and O_2 (0.5 l./min.) added only before entering the combustion furnace, resulting in 20% O_2 in the gas mixt., only 2-3% of the S was oxidized at $t_e = 250-300°$; five-fold increase of the length of oxidation, through 5-fold reduction of the rate of N_2 and of O_2, raised it only to 4-4.6%, as against 91% combustion with t_e 140° under the same conditions. In combustion at 800°, 0.76 sec., $t_e = 140$, 160, 180, 200, 300°, the degrees of combustion were 74.5, 68.8, 62.9, 57.3, and 8.2%, $k'' = 1.60$, 1.50, 1.35, 1.12, and 0.06, resp. (3) At too-low t_e (140°), too much air (500 cu.m./kg. S) is needed for evapn. as compared with the 10 cu.m. necessary for the combustion of that amt.; to reduce the amt. of air to 10 cu.m./kg. S, one would have to evap. at 230-240° at which t_e subsequent combustion is too slow; consequently, the optimum industrial procedure should begin evapn. at a low temp. and complete it at a higher temp. (4) In free combustion of liquid S in air, the mean rate is $k''' = 15.6$ kg./sq.m./hr. In a tube, in a stream of air, inflammation begins above 200°; k''' rises rather slowly with the temp., more markedly with v and also with the length of the combustion, e.g., $v = 2$, 5 min., 250 and 300°, $k''' = 20.7$ and 34. The latter rate is close to the rate of evapn. of liquid S near the b.p. (380°) in N_2 at v 2, 20 min., $k''' = 37.4$. Combustion of liquid S clearly takes place in the gas film adjacent to the liquid surface, and its rate is detd. by that of evapn.; that the rate of combustion seems to vary relatively little with the temp. in the furnace is doubtless due to the fact that the temp. at the phase boundary is actually higher and rather close to the b.p. of S. Increased velocity of the air stream acts both by the increased supply of O_2 and the increase of the rate of desorption of the products. The effect of prolonged combustion is due to gradual rise of the temp. in the flame zone.

N. Thon


1ST AND 2ND ORDERS
3RD AND 4TH ORDERS
PROCESSES AND PROPERTIES INDEX
COMMON ELEMENTS
MATERIALS INDEX
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION
AUTHOR INDEX
1ST AND 2ND LETTER
C

Complex utilization of alunites. M. I. NEKRICH, A. N. TSEITLIN, AND A. YA. KRAINYAYA. *Trudy Khar'kov Khim. Tekhnol. Inst. im. S. M. Kirova*, 1945, No. 5, pp 187–88.—In obtaining alumina by sintering alunite concentrate (30 to 37 Al_2O_3 and 30 to 35% SO_3) and alunite ore (20 to 25 Al_2O_3 and 15 to 20% SO_3) with Na and K sulfates and coal, the recovery of sulfur can best be accomplished by using 35 to 40 parts of coal for 100 parts of alunite and sintering at a temperature not lower than 900° to 950°C. B.Z.K.

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

CA

18

Solubility of nitric oxide in nitrose. A. N. Tseitlin (S. M. Kirov Chem.-Technol. Inst., Khar'kov). *J. Applied Chem.* (U.S.S.R.) 19, 820-5(1946)(in Russian).—Nitrose of varying N_2O_3 content was prepd. by dissolving chamber crystals SO_2HONO in H_2SO_4. At room temp., the soly. of NO, at const. d. of the nitrose, increases with the N_2O_3 content, example: 58.7°Bé., N_2O_3 0.5, 1.0, 4.0%, NO absorbed (Ostwald's coeff.) 0.26, 2.35, 7.8 ml. l.; at const. N_2O_3, the NO soly. increases with decreasing d., example N_2O_3 1.0, d. 60.9, 58.7, 57.7°Bé., NO 0.26, 2.35, 3.64 ml./l. The soly. decreases very slowly with rising temp.: d. 59°Bé. (1.695), N_2O_3 1.18, t 40, 70, 80, 93, NO absorbed 1.5, 1.495, 1.285, 0.885 ml./l. To equal increases in the N_2O_3 content correspond, at each temp., approx. equal increases in the soly., e.g., in 50.2°Be. nitrose a 3.64-fold increase of N_2O_3 results, at 40 and 70°, in a 4.3- and 3.8-fold increase of NO soly.; in the 57.8°Bé. acid, a 3.48-fold increase in N_2O_3 raises the soly. of NO 3.54 and 3.40 times, at 40° and 70°, resp. It indicates formation of a $N_2O_3.xNO$ complex where x = 0.25 and 0.5, for the 50.2° and the 57.8°Bé. acid, resp. An indication that the soly. of O_2 is much higher in nitrose than in H_2SO_4 is given by the observed rise in N_2O_3 content along with increasing satn. with NO, example, 57.8°Bé. nitrose, 19°, 0, 1, 3.5, 48 hrs., NO 0, 0.085, 0.105, 0.257%, N_2O_3 1.11, 1.15, 1.20, 1.29%; if it is assumed that the N_2O_3 is formed through $4NO + O_2 = 2N_2O_3$, the soly. of O_2 is 0.205 ml./g. = 0.41 ml./l., or 20-25 times the soly. of O_2 in H_2SO_4 of the same concn.

N. Thon

COMMON ELEMENTS

OPEN

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

TSEYTLIN, A.N.

Selecting the parameters of the automatic control of tower systems for the production of sulfuric acid. Khim. prom. [Ukr.] no.1:60-64 '63 (MIRA 17:7)

1. Khar'kovskiy politekhnicheskiy institut.

TSEYTLIN, A. N.

23286. Ob optimal'nom sostave nitroz v bashennom proizvodstve sernoy kisloty. Trudy zhark. Khim-Tekhnol. in-ta. im. kirova, vyp. 7, 1949, c.69-82. Bibliogr: 12 Nazv.

SO: LETOPIS' NO. 31, 1949

TSEYTLIN, I. E.

23250 Neytralizatsiya kislykh stokov metallurgicheskikh zavodov. Trudy Khar'k. Khim-tekhnol. In-ta. Im. Kirova, vyp. 7, 1949, s. 201-04.-Bibliogr: 5 nazv.

SO: LETOPIS' NO. 31, 1945

S/064/60/000/01/20/024
B022/B008

AUTHORS: Atroshchenko, V. I., Tseytlin, A. N., Zasorin, A. P., Zolotarev, V. S.

TITLE: The Utilization of Nitrogen Oxides - the Waste From Some Processes

PERIODICAL: Khimicheskaya promyshlennost', 1960, No. 1, pp. 79 - 80

TEXT: The problem of the utilization of nitrogen oxide waste developing during the manufacture of some products of the organic synthesis is dealt with in the paper under review. The development of a simple method for the utilization of nitrogen oxide waste in industry is desirable. The principal reactions which determine the forming of nitric acid from nitrogen oxide are mentioned and equations for the reaction rate are given. The utilization of highly concentrated nitrogen oxides permits the production of 55% nitric acid in accordance with the equation of equilibrium of the second reaction ($K_p = P_{NO}/P_{NO_2}$). The absorption takes place in a bubbling column which represents an absorber of improved type in the

Card 1/2

The Utilization of Nitrogen Oxides - the Waste From Some Processes

S/064/60/000/01/20/024
B022/B008

given case. The high nitrogen oxide content in the gas permits also a simplified gas flow through the system, the gas flow being obtained with the aid of a vacuum pump of the type RMK (from acid-resisting alloys). The arrangement is given schematically (Fig.) and its characteristic values are given. The oxygen consumption for a daily production of 55% of HNO_3 amounts to 14 m^3/h in all; the dimensions of the second cooler are reduced to two sevenths, the weight of the column to one fourth, the number of bottoms to 8, and the consumption of electric power to one fifth. There is 1 figure.

Card 2/2

TSEYTLIN, A.N.; KRAYNYAYA, A.Ya.

Denitration of nitrose by water vapor in bubble-type towers.
Izv.vys.ucheb.zav.;khim.i khim.tekh. 5 no.2:297-302 '62.
(MIRA 15:8)

1. Khar'kovskiy politekhnicheskiy institut imeni Lenina i
Khar'kovskiy inzhenerno-ekonomicheskiy institut.
(Nitrose) (Denitration) (Plate towers)

TSEYTLIN, A.N.; SMIRNOVA, O.M.

Denitration of nitrose in the combined production of nitric and sulfuric acids. Izv.vys.uch.zav.; khim.i khim.tekh. 5 no.4:612-616 '62. (MIRA 15:12)

1. Khar'kovskiy politekhnicheskiy institut imeni Lenina, kafedra tekhnologii neorganicheskikh veshchestv.
(Nitrose)
(Nitrosylsulfuric acid)

L 12671-63

ACCESSION NR: AP3000639 S/0080/63/036/003/0490/0495

44

AUTHOR: Safiullin, N. Sh.; Tseytlin, A. N.

TITLE: Absorption of nitric oxides by sulfuric acid

SOURCE: Zhurnal prikladnoy khimii, v. 36, no. 3, 1963, 490-495

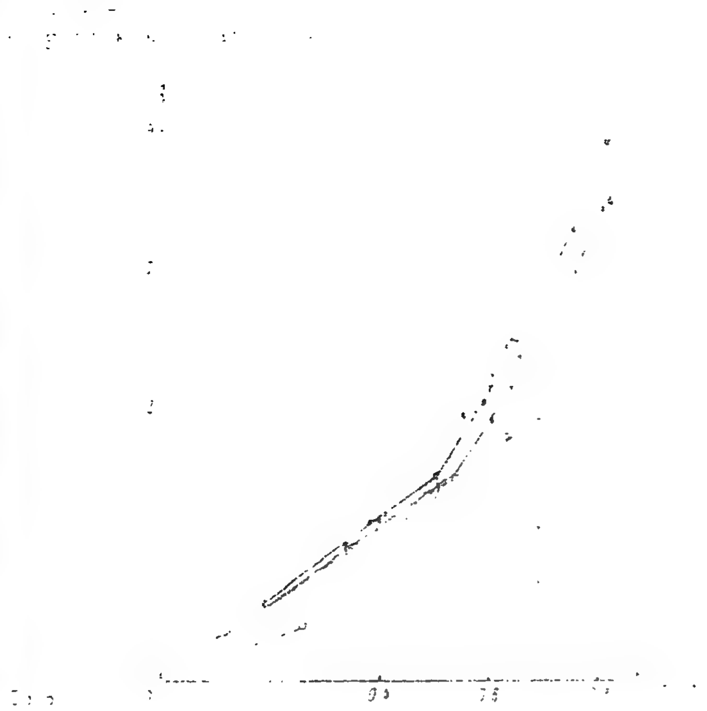
TOPIC TAGS: nitric oxides, absorption

ABSTRACT: In the study of the effect of a number of factors on the speed of absorption of nitric oxides in sulfuric acid containing 0.15-0.20% NO·NO sub 2, it was found that the absorption of nitric oxides is noticeably increased as the concentration of sulfuric acid is increased to 85%. A further increase in the sulfuric acid concentration does not contribute to the speed of absorption. The increase of linear speed of gas by more than o.5 m/sec and the density of flow more than 6-7 m sup 3 / m sup 2 x hour does not change the speed of absorption of nitric oxides. When the nitration of concentrated sulfuric acid is increased from 0.0 to 4.4% HNO sub 3, the speed of absorption of nitric oxides is decreased only by 8%. The temperature of the apparatus shows a considerable effect on the speed of absorption of nitric oxides. The relative speeds of absorption of nitric oxides at the temperatures 18, 40 and 60C are 1:0.48:0.38 respectively. Original article has: 2 tables, 7 graphs, 2 figures.

Card 1/~~2~~1

NO REF SOV

Card 2/4



[illegible]

[illegible] of nitric acid versus

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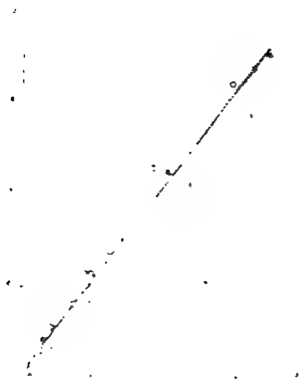

Fig. 2. Rate of formation [illegible] nitric acid versus [illegible] of absorption A (atm)

I-III--series of experiments.

TSEYTLIN, A.N., inzh.; LITVINENKO, I.I.

Hydraulic resistance of sprayed nozzles in direct flow. Khim. i neft. mashinostr. no.5:24 N '64 (MIRA 18:2)

TSFYTLIN, A.N.; SMIRNOVA, O.M.

Checking the technological scheme of the combined production of sulfuric and nitric acids. Ukr. khim.zhur. 29 no.9:987-990 '63. (MIRA 17:4)

1. Khar'kovskiy politekhnicheskiy institut im. V.I.Lenina.

TSEYTLIN, A.N.; SMIRNOVA, O.M.

Operation of a packed denitrating column under plant conditions.
Izv.vys.ucheb.zav.;khim.i khim.tekh. 6 no.5:807-810 '63.
(MIRA 16:12)

1. Khar'kovskiy politekhnicheskiy institut imeni Lenina,
kafedra tekhnologii neorganicheskikh Veshchestv.

Tseytlin, A.N.

KRASIN, V.P., inzh.; TSEYTLIN, A.N., inzh.

Using grinding wheels with graphite fillers. Mashinostroitel' no.12:24-25 D '57. (MIRA 10:12)

(Grinding wheels)

S/117/60/000/011/029/035
A004/A001

AUTHORS: Abaturov, I. G., Tseytlin, A. N.

TITLE: Service Tests of High-Speed Steel Milling Cutters

14

PERIODICAL: Mashinostroitel', 1960, No. 11, pp. 27-28

TEXT: The authors report on service tests which were carried out with new high-speed steel grades developed by the Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (Central Scientific Research Institute of Ferrous Metallurgy) under the leadership of A. G. Ivanov, Candidate of Technical Sciences. The tests, effected with profile cutters and end cutters of the new high-speed steel grades Р18Ф2 (R18F2), Р24 (R24) Р9К10 (R9K10) and Р9К5 (R9K5), showed that the efficiency of machining heat-resistant steel could be increased by 2 - 3 times. The R24 high-speed steel grade differs from the R18 grade steel by a higher tungsten content, while the high-speed steel grades R18F2, R9K10 and R9K5 differ from the steel grades R18 and R9 by higher vanadium and cobalt contents, which increases the life and red hardness of the tools. The forging and heat-treatment conditions of high-speed steel tools are given in the following table:

Card 1/4

S/117/60/000/011/029/035
A004/A001

Service Tests of High-Speed Steel Milling Cutters

Temperature in °C	Steel Grade			
	R18F2	R9K10	R24	R9K5
Forging:				
initial	1170 - 1110	1150 - 1110	1150 - 1110	1150 - 1110
final	950 - 900	950 - 900	950 - 900	950 - 900
Annealing	840 - 880	840 - 880	840 - 880	840 - 880
Hardening	1270 - 1290	1220 - 1240	1260 - 1310	1220 - 1250
Tempering	560 - 580	550 - 570	560 - 600	540 - 570

At the beginning the forging blanks are heated up slowly to 750 - 800°C, then heating takes place rapidly. The forged blanks are heated in the furnace up to 730 - 780°C, holding takes place at the same temperatures for 3 - 6 hours, then they are cooled down to room temperature. The blanks are annealed in cases filled with cast iron chips, at temperatures in the range of 840 - 850°C, holding takes place for 3 - 4 hours. Then the furnace with the blanks is cooled down to 730 - 750°C at a rate of 20 - 30°C/hour, holding takes place for 3 - 4 hours and further

Card 2/4